STRATEGY RESEARCH PROJECT

ARMY CONTRACT AIRCRAFT MAINTENANCE – CAN WE AFFORD IT?

BY

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USAWC CLASS OF 2001

U.S. ARMY WAR COLLEGE, CARLISLE BARRACKS, PA 17013-5050

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ABSTRACT

AUTHOR: Colonel Troy L. Lovett

TITLE: Army Contract Aircraft Maintenance – Can We Afford It?

FORMAT: Strategy Research Project

DATE: 10 April 2000 PAGES: 30 CLASSIFICATION: Unclassified

The Army aviation maintenance community finds itself at a challenging crossroads. In the midst of RMA, RML and transformation, it must seek smart, innovative and cost effective concepts, procedures, and systems that will allow it to remain affordable, compatible and relevant to future aviation and the overall Army. To meet these requirements, we must embrace fundamental changes in our methods of support operations. Deciding how and which changes to embrace become the real challenge for our leaders since these decisions will effect long-term investments. The time is right to actively explore the concept of contracted aviation maintenance support as an integral part of the Army aviation maintenance system.

There are no guarantees that contracting will produce overall cost reductions. Without looking and studying, we run the risk of missing opportunities. Leadership must resist the temptation of clinging to current ways and demand the exploration of more cost effective methods for our future. Reductions in infrastructure, redundancy and "overhead", in-theater CSS footprints, refinements of the aviation force structure, and realization of a distribution based logistics system can all be satisfied potentially to some degree or another by using contract maintenance instead of the military and civilian force structure currently in place.

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> ...We will aggressively reduce our logistics footprint and replenishment demand. This will require us to control the numbers of vehicles we deploy, leverage reach back capabilities, invest in a systems approach to the weapons and equipment we design, and revolutionize the manner in which we transport and sustain our people and material...
>
> — General Eric K. Shinseki, Chief of Staff of the Army

In his white paper *The Army Vision: Soldiers On Point for the Nation Persuasive in Peace, Invincible in War*, GEN Shinseki, Chief of Staff of the Army (CSA), challenged all members of our Army to transform the institution as we know it into "...an array of deployable, agile, versatile, lethal, survivable and sustainable formations, which are affordable and capable of reversing the conditions of human suffering rapidly and resolving conflicts decisively..." responsive and dominant at every point on the operational spectrum.[1] With an all too real recognition that today's premier land force was too heavy, too cumbersome, and too slow to provide a rapidly deployable and decisively responsive strategic option to national leadership, he boldly stepped off the precipice that many former senior Army leaders had acknowledged, yet refrained from acting on. Some fifteen years ago, the prevailing trend in operational concepts for future military operations within the Army's Training and Doctrine Command (TRADOC) called for light, yet lethal combat forces capable of rapid world-wide deployment, highly mobile, situationally aware, possessing the means to bring massive, overwhelming fires to bear at stand-off ranges, and sustainable with minimal tooth-to-tail ratios.[2] These trends represented radical changes in thought and design of doctrine and equipment from the full-scale, "Fulda-Gap", 'beat the Soviet Union" mentality of that time. GEN Shinseki has decided to force the change for the future, or at least get the ball rolling, during his watch.

The CSA's decision to transform the Army comes on the heels of a declared Revolution in Military Affairs (RMA). Coupled with and part of RMA is the corresponding Revolution in Military Logistics (RML). As the RMA seeks to take advantage of new war fighting concepts and emerging technologies, so RML seeks to leverage proven commercial business practices, off-the-shelf systems and services, outsourcing, technology, and innovative support concepts in the face of a dynamic and uncertain future. In fact, it is said in some circles that RML is a prerequisite for RMA.[3] Regardless of the absolute truth of this declaration, no one can argue the desire to get the most out of each dollar available to the Department of the Army in light of the many competing requirements for readiness, modernization, and personnel.

As part of RMA and RML, the Army logistics community is actively seeking the smart, innovative and cost effective concepts, procedures, and systems that will allow it to provide necessary support and services to our soldiers. Within these revolutions, the Army aviation maintenance community faces the same challenges as all other branches: how to make the aviation support force compatible with the transforming Army force structure and remain strategically and operationally relevant to the overall force. Probably more important than any one other factor is how can the Army afford the increasing dollar costs associated with Army aviation as it seeks to re-capitalize its legacy fleet and field the Comanche. In light of these demands from RMA, RML and the need to reduce costs, I believe the time is right to actively explore the much maligned concept of contracted aviation maintenance support, where appropriate and in concert with battlefield needs, as an integral part of the Army aviation maintenance system. It is beyond the scope of this paper to conduct a true Cost and Operations Effectiveness analysis; my intent instead is to examine futures requirements, current and past practices and potential examples illustrating the practicality and feasibility of using contracted aircraft maintenance and supply support for further consideration.

BACKGROUND

HISTORY OF ARMY AVIATION MAINTENANCE

The history of Army aviation maintenance dates back to the First World War and the first squadrons designed and developed for the fledgling Army Air Corps. These original units where planned and developed to be light and mobile while retaining capabilities to support its organic aircraft. In order to meet those planning requirements and because the flying machines where getting more and more complex, a maintenance echelon system was established based on complexity of repair required and the type of tools, mechanic skills and test equipment required to affect the repair.[4] This basic echeloning concept remained the cornerstone of aviation maintenance system design throughout the Second World War, the eventual departure of the Army Air Corps to become the U.S. Air Force, the rapid and wide spread proliferation of helicopter use in Vietnam right up to present day doctrine. Somewhere along the way the term echelon fell out to be replaced by "level", but the concept of maintenance tasks aligned against tools and worker skills remained intact.[5]

Post-Vietnam, the aviation maintenance system mirrored the ground maintenance system at least on paper: Organizational, Direct Support, General Support and Depot. This method of

operations was considered uneconomical, wasteful and duplicative based on actual experience during the Vietnam conflict. To streamline itself and thus become affordable, efficient and effective, the Army adopted a three level system in the late 1970s. All organizational and approximately 60% of direct support tasks migrated into aviation units as Aviation Unit Maintenance at the lowest level. The remaining 40% of direct support tasks where combined with approximately 40% of general support tasks to become Aviation Intermediate Maintenance. The rest of the general support tasks where moved to the third and final level, depot.[6]

CURRENT DOCTRINE

FM 3-04.500 (formerly FM 1-500), Army Aviation Maintenance, defines the current doctrine for the Army aviation maintenance system. It is a three level system divided into Aviation Unit Maintenance (AVUM), Aviation Intermediate Maintenance (AVIM) and depot level maintenance.[7] In keeping with the basic concept of aviation maintenance used by the Army, each level is based on specific maintenance tasks, tools available and worker skills. Tasks and responsibilities are:

- AVUM. AVUM platoons and companies handle aviation operational maintenance providing quick turnaround through on-aircraft repair by replacement, minor repairs to structure and systems, adjustments, lubricating and servicing. As such, these units are equipped with limited numbers of tool sets and test equipment. These units are organic to aviation organizations at all levels and, by design, dependent on support from an AVIM unit.[8]
- AVIM. AVIM companies and battalions provide intermediate-level and limited back-up AVUM support to supported units and are either divisional or non-divisional. These units are equipped with large numbers of tool sets and Test, Measuring, and Diagnostic Equipment (TMDE) in order to fulfill its primary responsibility is to repair aircraft, electronic and armament components, systems and end-items for return to the supply system or to the airframe.[9]
- Depot. Depot level maintenance provides the ability to overhaul, repair, modify retrofit and modernize airframes and aircraft systems. Although normally conducted at fixed sites in CONUS or established Theater Army support facilities, e.g. Europe, support teams may be deployed for on-site repairs as necessary.[10]

DISCUSSION

FUTURE REQUIREMENTS

As stated earlier, the Army logistics community, as well as the Department of Defense logistics community, is engaged in a Revolution in Military Logistics (RML). In order for the logistics community to truly "revolutionize" itself, it must embrace several fundamental conceptual changes or tenets that are the keystones for realizing success. RML tenets such as *A Single Logistics System, Total Asset Visibility,* and *Distribution Based Logistics* to name a few, are radical departures from the processes of supply and maintenance support we have grown accustomed to. Paramount to each of these keystones is the overarching desire is to break away from the old ways of doing "business" and the large overhead associated with it.[11] Large stockpiles of supplies and spare parts along with echeloned, redundant maintenance facilities represent the large "sunk" costs and "investments" of fixed overheads that are no longer affordable on the grand scale we see today. The way ahead for logistics support demands re-thinking these and other practices as can be seen in several futures-oriented documents that are today guiding our development of the future Army. Implied in these discussions of future required capabilities is the challenge of determining how best the Army's aircraft maintenance system can evolve to meet these requirements.

FOCUSED LOGISTICS

In July 1996, the Chairman of the Joint Chiefs of Staff issued *Joint Vision 2010*, which provided the conceptual framework for our armed forces to think toward the future. The operational concepts outlined in this framework and later incorporated in our National Military Strategy and the follow-on *Joint Vision 2020* include Focused Logistics. As defined Focused Logistics is "...the fusion of information, logistics and transportation technologies to provide rapid crisis response, to track and shift assets even while en route, and to deliver tailored logistics packages and sustainment directly at the strategic, operational and tactical levels of operations."[12] As an operational concept, Focused Logistics defines the future capabilities required of the Army's logistics systems. Although heavily reliant on information technologies to achieve realization, Focused Logistics equally requires the transition from rigid, vertical organizations of supply and maintenance as we know them today to responsive, integrated, modular and tailored Combat Service Support (CSS) packages that effectively reduce

dependence on large stockpiles and inventories, redundant infrastructures and cumbersome support systems.[13]

The combined effect of these improvements coupled with real time information provided through the combination of command and logistics information systems and semiautomatic, built-in diagnostic sensors is the reduction of CSS forces and infrastructure required on the battlefield with combat forces. Reductions in this logistics "footprint" not only enhances strategic and tactical mobility of the combat force, but also reduces exposure to enemy action contributing to full dimensional protection.[14] Instead, only those personnel and equipment required for battlefield distribution and immediate use of supplies and repair parts would deploy with the combat force. In those circumstances where on-site technical expertise is necessary, such as specific equipment repairs, special logistics teams, called *Log Pulses* would be employed. Similar to today's contact team support technique, each log pulse would be assembled at some designated location outside the immediate theater and "launched" to a specific delivery site, complete necessary repairs as quickly as possible and then be extracted. The log pulse would be comprised of only those personnel, tools and repair parts possessing requisite technical and special skills necessary to complete a specific "mission" and would come from anywhere within the logistics infrastructure to include active, reserve or contractor.[15] This type of employment technique enables the overall logistics system to reduce redundancy through centralized control of assets, both things and people, while providing the opportunity for flexible and responsive support where it is actually needed in space and time.

ARMY TRANSFORMATION REQUIREMENTS

Within the Army's effort to transform itself is the Army's own RML necessary to realizing the Army Vision outlined by GEN Shinseki. The Army's RML represents a radical transformation which moves the Army's logistics focus from supply mass to distribution velocity and precision – a distribution based logistics system (DBLS).[16] The RML objective is to "...create a distribution based logistics system that provides the theater commander a small, transparent, yet highly responsive logistics capability which sustains operating tempo without operational pause."[17] Although dubbed the Army's RML, it is not substantively different from the Focused Logistics operational framework and embraces relatively the same fundamental concepts with an Army spin. It also is heavily reliant on information and information distribution technologies for success as well as embracing fundamental changes in supply, support and maintenance practices. Specifically, it calls for: the integration of all logistics capabilities

whether DoD or contractor; anticipatory capabilities through information and decision support systems and embedded diagnostic and prognostic sensors; the development of two-level (organizational and depot) maintenance systems; and, providing only essential tailored, modular CSS support in theater.[18]

AVIATION FORCE MODERNIZATION PLAN (AFMP)

Although not considered a primary player in the Army transformation effort, the Army Aviation community is preparing for its future through its Aviation Force Modernization Plan (AFMP). The AFMP supports the Army transformation and Joint Vision 2020 by establishing objectives and conditions for continued modernization while simultaneously emphasizing reductions in operations and sustainment costs, re-capitalization, and refining the aviation force structure.[19] It outlines the aviation community's strategy and roadmap to the future aviation objective force structure to meet the Army's goals for strategic responsiveness. Some of the key objectives of the AFMP are:

- The movement to a four-helicopter fleet: RAH-66 Comanche, AH-64D Apache, UH-60 Blackhawk and CH-47F Chinook. This will require the retirement of the Army's older legacy aircraft such as the AH-1 Cobra, UH-1 Iroquois, OH-58C Kiowa and OH-58D Kiowa Warrior from the active and reserve force structure. To accommodate this plan, initial units will only be filled to eighty percent of authorized Table of Organizations and Equipment (TOE) requirements in the near term. Other units will modernize using a mixture of reduced TOE requirements fill and substitute aircraft to obtain the mid- and far-term force structure objectives. Retirement of these older legacy aircraft will allow refinement of the overall aviation force structure and focus on re-capitalization and modernization.

- The development and fielding of aviation Multi-Functional Battalions (MFBs) as the basic war fighting unit under the objective force structure. This represents a significant departure from the "pure fleet" battalions currently in the force structure. It is envisioned that MFBs and divisional aviation support battalions (ASB) will have the capability to detach a company-sized task force to conduct autonomous operations while the parent units operate in a split-based manner from a distant location.[20] This requirement will mean a major re-organization for the ASB force structure; its current

designed configuration of personnel and tooling does not lend itself to modularity or split-based operations.[21]

Embedded in the AFMP are the aviation logistics requirements for the future. The objective plan for aviation logistics focuses on the transitional force re-capitalization and modernization and provides a roadmap to full-spectrum logistics versatility. Future aviation logistics will incorporate total automation, strategic modularity, multi-functionality and a reduced footprint.[22] Although not clearly and succinctly stated, the aviation logistics community needs to radically change its procedures and force structure for maintenance support in order to meet these future requirements and remain compatible and interoperable with the overall logistics community changes driven by the Focused Logistics concept and RML. The manifestation of these changes will be a carefully orchestrated ballet over time that will require innovation, foresight and thinking well outside the traditional aviation logistics box.

WHERE WE ARE TODAY

In order to meet the requirements of the future battlefield, the Army aviation maintenance community must embrace fundamental changes in its methods of support operations. A clear and viable option would be to adopt proven commercial aviation maintenance practices, where appropriate, by outsourcing, e.g. contracting, aircraft maintenance and supply support.[23] In particular, economic and force structure benefits can be realized through the streamlining or elimination of intermediate level maintenance organizations where the majority of redundancy and stockpiles, a.k.a. the logistics footprint, resides. This approach is not new; DoD has been looking at this approach for several years now and, when managed properly, constitutes an acceptable alternative when weighed against the factors of: the need to focus on its core combat capabilities; the drive for efficiencies from a smaller DoD infrastructure; and, the continuing decline in real dollars of Defense budgets, coupled with the need to afford acquisition of new and updated weapons systems.[24] This approach also satisfies the Department of Defense Instruction (DODI) 3020.37 that states, "The Department of Defense components shall rely on the *most effective mix of the total force, cost and other factors considered*, including active, reserve, civilian, host nation, and *contract resources* necessary to fulfill assigned peacetime and wartime missions (emphasis added)."[25] A survey conducted in 1996 at the request of the Department of Defense established that approximately $3 billion dollars of the annual DoD aviation maintenance budget of $15 billion dollars, or twenty percent, is spent on

contract maintenance.[26] The survey also estimated that the trend for DoD use of contract aircraft maintenance would continue to grow given the factors mentioned earlier.

Contracted services and support is certainly not new to the Army. Since its establishment in 1775, the Army has relied on contractors to provide primarily logistical services, supply and support throughout our history with various degrees of success and failure.[27] Contract maintenance has been part of the Army's aircraft maintenance support system in some fashion or another since its inception in the Army Signal Corps. During the Vietnam War, considered by some to be the height of Army aviation prowess, over 2,000 contracted maintenance personnel of the total aircraft maintenance force were deployed in theater to support 4,228 aircraft, a ratio of 1:2.[28] Contracting aircraft maintenance has been with the Army from the beginnings of aerial flight, through all of its conflicts, up to our present day.

FT. RUCKER

A prime current example of the successful application of contracted aircraft maintenance is the maintenance and support activities at Fort Rucker, Alabama. The Army operates its entire aviation training activity at Fort Rucker with a system of competitively awarded contracts, including maintenance.[29] Massive in scope, the Fort Rucker operation supports over 550 multiple type aircraft in one of the largest and most diverse operations in the Department of Defense. The contractor provides an extensive, military-oriented, organizational and intermediate maintenance capability as well as depot repair for those items not repaired in the Army's normal depot repair system. The contract is managed out of the installation's Directorate of Logistics through a single program office where contractor-to-military interface takes place.

ARMY FIXED-WING MAINTENANCE

Another example of present day contracted aircraft maintenance is the maintenance support structure for the Army's fixed wing fleet. This fleet is composed of predominantly commercial derivative aircraft adapted to Army use as intelligence gathering and operational support airlift platforms. Much smaller in size compared to the Army's rotary wing fleet, it remains an integral part of the Army's war fighting team for now and well into the future[30]. To support this part of its overall fleet, Army aviation adopted a support structure that is wholly contracted. This move represented a realistic solution to the dilemma of constrained resources

in terms of dollars and force structure. Because of its comparatively small size as a fleet, the Army determined that it could better afford contracted maintenance support, rather than maintain the requisite infrastructure of facilities, tooling, repair parts and technical personnel in the active or reserve force.[31] As recently as 1 October 2000, the Army's Aviation and Missile Command awarded a 10-year, $900 million dollar contract for the support of the Army's C/RC-12 and UC-35 fixed-wing aircraft that includes all phases of maintenance, material management, repair and modification to the aircrafts' airframe, engines and components.[32]

LOCAL SERVICE CONTRACTS

Contracted aircraft maintenance for Army aircraft is also found at each major CONUS Army installation and in the major theaters of Europe and Korea[33]. These contracts are locally awarded by the installation they support, usually DOL, or through a material management command with overall support responsibilities. They are similar in scope to their ground systems counterparts found throughout the Army's installation support infrastructure. They provide intermediate level and often limited depot level maintenance repair and supply for aircraft and aircraft systems and components.

WHERE WE ARE GOING

As we have seen, contract aircraft maintenance is not in and of itself a revolutionary concept in the way the Army conducts business. It has been with the Army in its past and exists today. What is unique are the potential cost reduction opportunities contracting aircraft maintenance presents as we develop the aviation and aviation maintenance support structure for the future Army. To this end and in keeping with the guidance contained in Focused Logistics, Joint Vision 2020 and the AFMP, the Army aviation community is already looking at various alternative approaches to current maintenance support design.

RAH-66 COMANCHE SUPPORT

The RAH-66 Comanche, the Army's future reconnaissance and attack platform, represents the Army's first aircraft that from conception incorporates many supportability initiatives, and as such, unique alternatives to the current maintenance support system. Comanche's design drives down maintenance and support requirements, resulting in reduced

operation and support costs. This is achieved through stringent reliability requirements, an integrated diagnostics and prognostics capability at the subsystem level, functional partitioning and modular design of components. Repair by replacement of modules, verified through comprehensive repair-level analyses, allows a two level maintenance system, user and depot, that will be fielded within the existing three level aircraft maintenance and supply system. Ground support systems, special tool and test equipment requirements are dramatically reduced from current aircraft requirements. Additionally, only 49 common tools are required to perform all User level tasks as compared to 275 common tools of today.[34]

Comanche does not directly represent an opportunity to realize benefits through contracted maintenance; it does so indirectly. As Comanche and its two level support system matures, the aviation logistics community can gleam lessons learned for application to the current system. Where it makes practical and tactical sense, maintenance and supply tasks currently required under the current three-level system can be migrated to contract sources using techniques and procedures discovered during Comanche's development and fielding. This approach can work toward the streamlining of intermediate level maintenance organizations, a clear step toward reducing the overall logistics footprint.

CORPUS CHRISTI PARTNERSHIP PROGRAM

Another alternative showing promise is the concept of public-private partnerships proposed by the Corpus Christi Army Depot (CCAD), the Army and DoD's primary rotary wing aircraft depot repair and overhaul facility. CCAD's plan is to seek out industry partnerships to complement depot-critical skills expecting to improve capacity utilization and ultimately improve overall readiness by having more aircraft systems ready for flight than are in the logistics pipeline.[35] Although this approach centers on realities CCAD faces in terms of losing capability through a retiring workforce of DoD civilians while faced with the long term requirement to support the Army aviation fleets' modernization program, it represents a different method of filling that potential void, or at least offsetting it, with already existing capabilities from the private sector versus trying to acquire it through the hiring of new DoD civilian journeymen and apprentices. In essence, CCAD's Partnership program will utilize workshare agreements, virtual prime vendor support agreements, direct vendor deliveries and Memorandums of Understanding with private industries to combine the unique attributes of both parties to integrate Defense production, engineering and logistics capabilities, and eliminate Defense resource duplications, thereby reducing infrastructure requirements and overall costs over

time.[36] As a step down this path, in September 2000, the Army's Aviation and Missile Command, CCAD and General Electric signed a $46 million dollar technical support/parts logistics agreement to reduce T700 (aircraft turbine engine) depot repair turn-around time by fifty percent and increase T700 time on-wing by 100 percent.[37]

PRIME VENDOR SUPPORT (PVS) EXPERIMENT

In Spring 1998, the Army designated the AH-64 Apache as one of two pilot programs for implementation of DoD imperatives for acquisition and logistics reform. By June 1998, an agreement was reached for Apache using a novel approach called the Apache Prime Vendor Support (PVS). In easy to understand terms, Apache PVS tied the economic success of the contractor to the operational and readiness profile of the aircraft. Performance based guarantees for requisition fill time and nonmission capable supply response time ensured reduced soldier workload and improved readiness.[38] Under this program, a large number of the duties normally performed at the intermediate maintenance level would be transferred to Team Apache Systems, the maintenance contractor.[39] The realized savings in costs due to reductions in force structure, facilities and spare parts using this approach were to be re-invested in the Army's aviation re-capitalization and modernization programs. Although this initiative did not ultimately receive approval by DoD for various reasons, it did represent an attempt to streamline the overall maintenance system by removing the intermediate level of repair force structure and replacing it with contract maintenance support.

THE IMPACT OF ARMY CONTRACT AIRCRAFT MAINTENANCE

Based on the review of future requirements, consideration of historical and current real-world practices, and recent efforts at outsourcing, it is clear that the concept of contracting aircraft maintenance support operations is a viable and realistic option for the aviation logistics community. However, fair consideration of this option would not be complete without laying out the advantages and disadvantages of such a course of action. Though many arguments exist in the aviation logistics community, both pro and con, the vast majority center around the desire to move forward into truly new ground versus the desire to retain tried and proven methods of operation.

THE ADVANTAGES

The most promising advantage of contracting maintenance supply and support is the potential reduction in the overall aviation logistics force structure and its' associated personnel

costs. Conceptually, a prime target for aviation maintenance force structure reductions is the intermediate level maintenance and supply organization (AVIM) with its large numbers of technical personnel, special tools and test equipment, and inventories of shop stocks used in component and systems repair. Additionally, where it makes good business sense, depot level maintenance activities could also be streamlined and economized with contractor support. Contracted maintenance organizations can assume the tasks of component and system repair for return to the repair parts supply system that currently constitutes the primary requirement for the Army's intermediate level maintenance structure. Those personnel, tools and test equipment that are organic to AVIM organizations so they can perform doctrinal back-up AVUM support should be re-inserted in those organizations where they came from in the first place. Component and system repair-by-replacement, albeit dependent on a responsive repair parts distribution network, would become the norm rather than the exception. In those situations where technical on-site assistance is needed, the Log Pulse concept can be used to satisfy an immediate operational or readiness need. The personnel savings in force structure, though realistically not "true" savings, would then be available for re-distribution to other or new critical personnel requirements.

Another advantage to contracting is the potential reduction in costs through divestiture of the "overhead" associated with component and systems repair. For example, current intermediate and depot organizations require repair parts inventories, facilities and tooling owned and maintained by the Army to support these maintenance tasks. Tools must be maintained and replaced, TMDE must be maintained and calibrated, and repair parts must be replenished, stored and managed all at a cost to the Army. In addition, these functions require personnel and equipment that are not directly engaged in aircraft maintenance and thus become another part of overhead costs. These costs would be absorbed by the contract maintenance organization responsible for providing intermediate or depot level repairs. Savings here would not be absolute; a portion of the real savings generated by divesture of this type of overhead would be used to pay for and manage the contract for services and support required. Those savings that are realized would be available for re-capitalization and modernization programs critical to Army aviation's future.

An equally important advantage of contracting for the aviation maintenance community is that it will readily allow compliance with the future battlefield requirements defined in the Focused Logistics concept, the Army's Transformation and the AFMP. Granted, none of these documents directs the use of contracting to effect compliance or satisfy future requirements. They do, however, direct the analysis and consideration of clear and distinct alternatives to the

ways and means by which we conduct logistics support today. Reductions in infrastructure, redundancy and "overhead", reductions of required in-theater CSS footprints, refinements of the aviation force structure, and realization of a distribution based logistics system can all be satisfied to some degree or another by using contract maintenance instead of the military and civilian force structure currently in place.

THE DISADVANTAGES

The most persistent argument against using contracted aircraft maintenance support from within the aviation community revolves around the potential loss of technical training and experience for the military personnel assigned to execute these tasks. Surveys conducted of soldiers assigned to aviation maintenance organizations that habitually used contract maintenance support routinely complained of being underutilized for maintenance operations. They felt that this allowed their own technical skills to erode over time, negated opportunities to grow and embellish what skills they did have and impacted on the overall morale of the military members of the unit.[40] Command and maintenance operations management within these units tended to rely heavily on the contracted element of their organization to accomplish more and more of the maintenance workload, while engaging soldiers in menial maintenance tasks and duties and details unrelated to maintenance operations, further exacerbating the problem. The perceived long term impact of these practices were military maintenance personnel that progress in their career fields with inadequate technical skills and experience, poorly developed management and teaching skills, and a general disillusionment of their worth to the aviation community resulting in career field transfers or leaving the Army entirely.

Another argued disadvantage to contracted support is the perceived unreliability of contracted service and support in general. Historically the use of contracted services and support has been mixed; in some cases they have performed brilliantly will in other cases they have driven the Army into crisis to overcome non-responsive and inadequate support.[41] The premise behind this perception centers on the degree of trust and confidence that exists between the supported command and the contractor. The supported military organization is seen to be at the mercy of the contractor and his sub-contractors for quality performance in all environments. To this end, there is no sure way to predict performance with certainty. If the contractor or one of his sub-contractors fails to perform or decides not to perform, the military is left with few if any alternatives for support, thus placing the overall operation in peril.[42]

Coupled with the trust and confidence issue, is the perceived loss of flexibility on the battlefield. While not a major concern in a peacetime or garrison environment, it acutely manifests itself when the contracted support is needed in a combat or austere, undeveloped theater. The supported unit is responsible for the physical and personal security of the contracted force, a requirement that siphons off combat forces and equipment, especially in a hostile or potential nuclear, biological, and chemical environment. The anticipated non-linear battlefields and austere environments envisioned for the future Army forces will provide a significant challenge to meet these requirements.[43] They are also responsible for a tasking mechanism and a contract management system, especially capable of providing prompt and timely payment that historically is time-consuming and semi-rigid due to legislation and regulation. Further, they execute no command authority over contractor personnel and hence have no "real" control or influence over their actions.

ASSESSMENT

When assessing the advantages and disadvantages of using contract aircraft maintenance and supply support, it is important to do so in the context of where the Army is headed with its transformation and RML. The development and implementation of command and decision information technologies allowing near- or actual-real-time personnel, equipment, and supply status and anticipated requirements are key and integral to its success. This ability will provide the overall Army logistics support system an unprecedented and unique capability to execute its support mission in proactive concert with combat operations. Coupled with the dynamics offered by this capability is the requirement, or better yet, opportunity to significantly revolutionize the systems, procedures and methods of logistics support we currently use. Behind this opportunity to change is the impetus to drastically reduce the costs of operation and sustainment through reduction, elimination or streamlining of infrastructure, redundancy, and dependency on stockpiles and inventories.

The use of contracted aircraft maintenance and supply support does have a potentially negative impact on the technical training and experience opportunities for our soldiers under our current systems of operation. If contractors are used to the exclusion of military personnel where they exist in military organizations, degradation of technical skills will occur over time. Instead, contracted support should be used to replace the need for military personnel. A proper application of contracted support would be for those tasks and in those echelons of support, e.g. AVIM or depot, where the need for military technicians can be eliminated, thus removing the

concern for skill loss. Soldiers would only need to be assigned in maintenance and supply organizations that routinely exercise their skills, specifically AVUM, under the three-level system, or User, under the two-level system.

Confidence and trust in contracted support can be enhanced through habitual relationships or public/private partnerships. Experience and time built relationships, coupled with timely and responsive government contract management systems, can work to dispel the traditional view of contracted support widely held today. Although some contractors have failed to meet requirements or expectations of the Army in the past, there are numerous examples where the exact opposite is true. The challenge to the Army is to carefully and judiciously gleam lessons from prior mistakes and use current and past successes for the future.

The concern for *flexibility* on the battlefield, can better be defined as *control* on the battlefield. What commander would not want absolute control of all resources and assets available to execute his or her mission! Control on the future battlefield, and consequently those assets and resources applied to it, will be executed through command and decision information systems that determine when and where "things" happen. With a reduced footprint in the area of operation, less combat force and equipment is diverted to security and protection. Under the Log Pulse concept, only specifically needed personnel would be introduced into the theater at a designated place and time for a specified period of time controlled and orchestrated by logistics management personnel, integral to the supported unit's support staff, in concert with current situations and operations. Any contract personnel introduced would come only when and where required and stay only as long as needed, thus reducing the command's *need to control* "things". Real flexibility on the battlefield is realized by using reach-back and Log Pulse concepts of operation routinely, concepts that are key elements of future logistics support and a distribution based logistics system.

CONCLUSIONS

The Army aviation maintenance community finds itself at an important and challenging crossroads. In the midst of the RMA, RML and transformation, it must seek smart, innovative and cost effective concepts, procedures, and systems that will allow it to remain affordable, compatible and relevant to the future aviation force structure and the overall Army. In order to meet the requirements of the future battlefield, the Army aviation maintenance community must embrace fundamental changes in its methods of support operations. There is no sense in continuing debate on where the "transformation" train is headed; it has already left the station.

Deciding how and which changes to embrace become the real challenge for our leaders today since these decisions will effect long-term investments in the future Army.

In light of the demands from RMA, RML and transformation, I believe the time is right to actively explore the concept of contracted aviation maintenance support, where appropriate and in concert with battlefield needs, as an integral part of the Army aviation maintenance system. It is a clear and viable option potentially having both economic and force structure benefits through the streamlining or elimination of intermediate level maintenance organizations where the majority of maintenance redundancy and stockpiles reside in the aviation maintenance support system. Additionally, the use of contractor support and private sector industries should be examined for eliminating or streamlining aircraft depot operations where it makes good business and readiness sense. Divestiture of the personnel and equipment "overhead" associated with component and systems repair potentially reduces overall operational costs making these "savings" available for re-capitalization and modernization programs critical to Army aviation's future.

Contract aircraft maintenance is not in and of itself a revolutionary concept. It has been with the Army from the beginnings of aerial flight, through all of its conflicts, up to our present day. Based on this experience, we know in advance there are problem areas that must be worked through to achieve meaningful success with this concept. Most critical is the need to critically analyze our contract and contract management systems in order to find proven procedures and processes that effectively discipline the overall process without adding complexity to an already bureaucratic process. While developing and emerging command and decision making information technologies potentially will exponentially enhance the management of logistics assets and resources, the inclusion of simplified and streamlined contracting management systems is a fundamental requirement as an integral part of the overall logistics system.

Detailed maintenance task analysis, similar to that ongoing with the developmental design and fielding of the Comanche, is needed to optimize the overall maintenance and support system of legacy aircraft that will remain with the Army well into the future. The two level maintenance and support system for the Comanche should serve as the model, or at least the goal, for all of our aircraft systems. As the aviation force structure modernizes and re-capitalizes its fleet, opportunities for streamlining and economizing maintenance and support requirements should be a priority effort. Some if not all of these discovered opportunities may lend themselves to contracted support.

Finally, genuine commitment from Army aviation's senior leadership is needed to protect the exploration and analysis of contracting applications. Ultimately, there are no guarantees that contracting will produce overall operational cost reductions; in fact, detailed analysis may show unacceptable cost increases. Without looking and studying, though, we run the risk of missing opportunities. The key is commitment at all levels without preconceived notions of results and let the analyses point to the opportunities. Aviation's leadership must resist the temptation of clinging to current ways of doing business and demand the exploration of better, more cost effective methods of operation for our future. Reductions in infrastructure, redundancy and "overhead", reductions of required in-theater CSS footprints, refinements of the aviation force structure, and realization of a distribution based logistics system can all be satisfied potentially to some degree or another by using contract maintenance instead of the military and civilian force structure currently in place. The potential savings are there if we are bold enough to look for and seize them. The real question is not whether or not we can afford contracting, but realistically whether or not we can afford not to.

Word Count: 6392

ENDNOTES

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